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November 12, 1997

Dr. Tom Kinder
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800 North Quincy Street BCT #1
Arlington VA 22217-5660

ONR Grant #N00014-95-1-1061

OSU #N0005A

Dear Dr. Kinder:

In order to complete my ONR grant entitled "Nearshore Oceanographic Instrumentation" I am sending three copies of the *Final Technical Report* to you with copies distributed as indicated below, along with a completed *Report Documentation Page (SF 298)*.

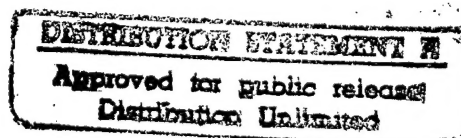
Sincerely,


Robert Holman

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6. AUTHOR(S) Robert Holman				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) College of Oceanic and Atmospheric Sciences Oregon State University 104 Ocean Admin. Bldg. Corvallis, OR 97331-5503			8. PERFORMING ORGANIZATION REPORT NUMBER N0005A	
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13. ABSTRACT (Maximum 200 words) <p>Understanding of the small scale dynamics of wave-driven boundary layers and their associated sediment transport requires special types of instruments capable of measuring high frequency time series of suspended load concentration, fluid velocity and the time-varying location of the sediment bed. This grant allowed the purchase of five Fiber Optic Backscatter Sensor arrays, five Vertical Electromagnetic Current Meter arrays and five pressure sensors, thus enabling collection of the needed measurements over an array of horizontal locations to test hypotheses of the role of small scale processes in the large scale response of nearshore morphology.</p> <p>These instruments were deployed during the large Sandy Duck field experiment, 10 Sept - 30 Oct, 1997. PIs involved in this ONR-sponsored work were Rob Holman (Oregon State University), Richard Sternberg and Andrea Ogston (University of Washington), Daniel Conley (State University of NY, Stonybrook) and Reg Beach (Office of Naval Research, RPO through Oregon State University). As the instruments just came out of the water in the last week, no publications have yet resulted.</p>				
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17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT	

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FINAL TECHNICAL REPORT

ONR GRANT #N00014-95-1-1061

Dr. Robert Holman
Nearshore Oceanographic Instrumentation

This instrumentation grant supported the purchase of equipment for use in studies of nearshore oceanographic processes. Equipment purchased included five Fiber Optic Backscatter Sensor arrays, five Vertical Electromagnetic Current Meter arrays, and five pressure sensors.

The instrumentation was purchased in order to investigate suspended sediment concentration, bed level fluctuations, horizontal fluid velocities and sea surface fluctuations in the nearshore region. After arrival of this instrumentation in Spring, 1996, the instrumentation was calibrated using facilities located at Oregon State University.

In conjunction with existing sensor inventories, this new equipment is presently being used in SandyDuck, a large multi-investigator nearshore experiment being conducted at Duck, NC from September 10 to November 1, 1997. Several PI's are involved in this ONR-sponsored field work. They are: Dr. Robert Holman (Oregon State University), Dr. Richard Sternberg and Dr. Andrea Ogston (University of Washington), Dr. Daniel Conley (State University of NY, Stonybrook), and Dr. Reginald Beach (Office of Naval Research, ROPO through Oregon State University).

Several aspects of nearshore fluid and sediment dynamics are being investigated using this equipment: (1) the vertical and horizontal structure of spectral partitioning of cross-shore and longshore transport; (2) the elevation and frequency bands of importance for various scales of morphology modification; (3) evaluation of the role of breaking waves on the vertical distribution of suspended sediment; (4) the cross-shore distribution of total suspended load and its relation to the beach profile; (5) examination of longshore coherence scales and the influence of large scale flows on nearshore morphology change and; (6) the correlation of sediment flux divergence to changes in beach bathymetry.

LIST OF PUBLICATIONS

Since the field experiment has just ended in the last week, there are yet to be publications from this grant.